

WE CLAIM

1. A device for downloading application data from a distributed application environment including:

5 an object loader for downloading objects; and

a controller for requesting the object loader to download a target object, for processing the target object and, where necessary, for requesting the object loader to download another object on which the target object depends, the device further including:

10 a preloader operable simultaneously with the object loader for object parsing the target object so as to determine all of the objects on which the target object depends, for downloading said objects and for storing said objects, such that said object loader can retrieve said another object from the preloader when requested to download said another object.

15 2. A device according to claim 1 further including a plurality of section filters, each for filtering out, from a received transport stream, sections relating to a respective requested object.

3. A device according to claim 2 wherein the section filters are MPEG section filters.

20 4. A device according to claim 2 wherein the preloader is arranged to download different objects simultaneously from different respective section filters.

5. A device according to claim 1 wherein the preloader is arranged to download a plurality of said objects simultaneously.

25 6. A device according to claim 1 wherein the preloader additionally object parses each of said objects so as to determine further objects on which said objects depend, downloads said further objects and stores said further objects.

7. A device according to claim 1 further including a receiver memory in which the preloader stores downloaded objects.

30 8. A device according to claim 1 wherein the objects include Java classes.

9. A device according to claim 8 wherein the object loader is a sequential Java class loader.

10. A device according to claim 8 wherein the preloader conducts class parsing of a loaded class file.

5 11. A device according to claim 1 further including:

a memory for storing a file for each previously downloaded target object, the file containing a list of the objects on which the target object depends which require the most time to download; wherein

the preloader downloads the objects identified in the file first.

10 12. A device according to claim 1 wherein, where the objects are provided together as part of modules, when the object loader or preloader downloads an object, the entire module for that object is stored in memory.

13. A device according to claim 1 which is MHP compliant.

14. A device according to claim 1 which is a television device.

15 15. A method of downloading application data from a distributed application environment, the method including:

requesting the downloading of a target object;

downloading the target object;

processing the target object; and

20 where necessary, requesting the downloading of another object on which the target object depends, the method further including:

simultaneous with processing the target object, object parsing the target object so as to determine all of the objects on which the target object depends and downloading said objects; and

25 storing said objects such that said another object can be retrieved in response to the step of requesting the downloading of said another object.

16. A method of downloading application data from a distributed application environment with a device including an object loader for downloading objects and a controller for requesting the object loader to download a target object,
30 for processing the target object and, where necessary, for requesting the object loader

to download another object on which the target object depends, the method including:

object parsing the target object so as to determine all of the objects on which the target object depends;

5 downloading said objects; and

storing said objects such that said object loader can retrieve said another object in response to the request to download said another object.

17. A computer readable storage medium having recorded thereon code components that, when loaded on a computer and executed, will cause that computer
10 to operate according to any one of the preceding claims.

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